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Perinatal mortality surveys

"No phenomenon or stage in a sequence has only one cause; all antecedent stages are successive causes and as science has no reason to infer a first cause, the sequence of causes can be carried back to the limit of knowledge."

These words from Karl Pearson's *The Grammar of Science*[1] are quoted in the report of what may well have been the first survey of individual fetal deaths.[2] This was done in 1914 at the end of an era when public concern about infant mortality had given rise to a series of government reports and trips to France, where things were said to be better. The survey by Eardley Holland and Ridge of 300 fetal deaths in London hospitals and poor law institutions took the form of pathological examinations of the fetuses and interviews with the parents.

In the past seven or eight years infant and perinatal mortality has once again been in the public eye. Comparisons have been made with other countries, controversies have raged, and oversimple explanations and remedies have been proposed. There have also been positive outcomes. One of these has been rising enthusiasm among midwives, obstetricians, paediatricians, and people working in the community health services for collecting data to help them assess their own work.[3]

An unfortunate side effect of this welcome trend has been some duplication of effort, because the people concerned have been unaware of the extent to which data are already being collected by others. In particular, many people are unaware of the vast body of data collected routinely by the National Health Service and government departments.[4] One symptom of this is the time it took for people to realise that in the late 1970s, as in the early 1900s, infant mortality rates were actually falling rapidly.

Most routine statistics are collected as byproducts of legal or administrative processes, which range from the registration of births, marriages, and deaths to the administration of the health services. This naturally affects their nature, strengths, and limitations. Because the civil registration of births and deaths is required by law, coverage should theoretically be complete, though it is possible for anomalous cases to fall through the net.[5] A study in Flanders and the Netherlands found that the explanation was commonly that doctors did not have sufficiently detailed knowledge of their countries' registration laws.[6]

Birth and death registration data may be used to make basic comparisons of mortality rates at different times and among babies born to residents of defined geographical areas. The rates may be subdivided—for example, according to the social background of the parents, the babies' birth weights, or the certified cause of death—and more powerful analyses are possible when birth and death records are linked.[7,8]

On the other hand, the registration system does not contain any clinical information or in most cases any indication of the sequence of events leading to a stillbirth or death. Even when the revised forms of stillbirth and neonatal death certificates are introduced the statements of "causes" of death will not be full enough for those wishing to do an in depth study. Much of this information may be found in clinical notes, but the data collected and the way they are recorded vary from place to place. This makes them difficult to merge for population based analyses. The consequence is that analyses are often confined to deliveries in individual hospitals, as was done recently in a detailed pathological study at St Mary's Hospital, Manchester.[9] Hospital based studies, however, always suffer from the difficulty of assessing the trends in mortality without hard evidence that there has been no change in the selection factors for delivery in specialist centres. Another deficiency in basing analyses on hospitals is that this excludes both planned home deliveries and also—more important—those women at high risk who inadvertently give birth in places other than hospitals.[10]

Given all these problems it is not surprising that there have been so many special perinatal mortality surveys which have been based on births to women living in a defined geographical area and have contained clinical information. Some of them—for example, the survey in the Northern region—have concentrated on data extracted from clinical and pathological case records.[11] Though representing a great advance on the data available previously, this may result in a narrow interpretation of the concept of the "cause" of death.

Other surveys, such as those in Exeter,[12] Leicestershire,[13] and the Mersey region,[14] have looked more widely and followed in Eardley Holland's footsteps in interviewing the bereaved parents. This has not only yielded valuable insights into the parents' social circumstances but has also shown up shortcomings in the care provided and clinical information which escaped recording in the woman's notes.

The report of the Mersey region survey included an

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assessment of the so called "avoidable factors" as in the Confidential Inquiry into Maternal Deaths.[14] This raises two problems. Firstly, the concept of avoidability, like that of causality, is highly subjective. Secondly, no one can know whether the absence of the "avoidable" factor would have prevented the death; indeed, the Northern region working party abandoned its search for "avoidable" factors. Other studies, including those in Exeter[12] and Leicestershire,[13] have avoided this dilemma by doing a case-control study.[15]

The spate of perinatal mortality surveys which took place in NHS areas and districts in the late 1970s seems now to be subsiding. In some cases local surveys acted as pilot studies for regional surveys which have now superseded them. In others, the funding ran out, or the key person moved to another job. So what is the future? In Scotland, the perinatal mortality survey begun in 1977[16] has now developed so that it has been linked to the SMR2 maternity discharge data system and become part of that country's routine data collection system.[17] The regions of England and Wales might profitably follow this example when they too have a maternity data system—based either on the Standard Maternity Information System or the system proposed by the Steering Group on Health Services Information.[18] Basing a survey on a system containing data about all births both reduces duplication of effort and increases the potential for selecting controls for case-control studies.

Attention also needs to be given to the question of an appropriate cut off point for perinatal mortality surveys. Unlike perinatal mortality rates, late neonatal and postneonatal mortality rates are not falling,[4] and the principal factors behind many late neonatal and postneonatal deaths are determined at or around the time of birth (p 1511).[19] Some surveys cover only the perinatal period, while others cover the late neonatal period as well, but even these miss some relevant deaths.

Calls have been made from time to time for a single national inquiry to be mounted in England and Wales as is done for maternal deaths. The consensus seems to be, however, that local and regional surveys are more flexible and allow attention to be directed to local problems. At the same time the local surveys would be more powerful if they had a common core of data.[20,21] At present the Scottish and Northern region survey teams are pooling their experience and making recommendations about how to collect data in a comparable way. Neither of these surveys include interviews with parents, so those who do such interviews will need to consider how to improve the comparability of such data.

Whatever data are collected and systems are used to process and analyse them, we need to keep the fundamental issues in sight (L S Bakketeig, A Oakley, unpublished observations). Some of the factors which lead to perinatal and infant deaths stem from less than optimal care of mothers and babies, while others are deeply rooted in the fabric of our society, and these two strands interact in unpredictable ways.

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How hard do general practitioners work?

General practitioners vary enormously in their consulting, home visiting, and referral rates,[1,2] but there has been little reliable explanation for such wide variations.[1,3] Furthermore, although there have been many studies of the quantity of care, there have been few of the quality of care; this is mainly due to the difficulty of defining quality of care in general practice.[3]

The study by Dr David Wilkin and Professor David Metcalfe (p 1501) shows how difficult it is to measure even workload in general practice. One hundred and ninety nine doctors (38% of general practitioners in five health districts in Manchester) recorded information about face to face patient contact on three working weeks selected from three four month periods. The methods used have been fully described.[4] The results not surprisingly show that the larger a doctor's list the more consultations he undertakes and the more time overall he spends with patients. There were considerable variations in time spent in direct patient contact, and the range of consultation times (four to 15 minutes for each patient) is similar to previous findings.[1,5]

Wilkin and Metcalfe draw our attention to the findings that 16% of doctors spent less than 12 hours a week in direct contact with patients and that 62% of doctors with list sizes of less than 2000 spent no more than 16 hours with patients. In contrast, 35% of the sample were providing care for over 2500 patients, and 30% of these doctors spent more than 24 hours a week in face to face contact with patients.

Although the doctors studied are claimed to be representative of all general practitioners in the area, detailed characteristics of subgroups and their practices are not available. There are no specific details about general practitioners with smaller lists, and the differences in their clinical behaviour suggest that doctors with lists under 2000 are a very heterogeneous group. In addition, characteristics of their patients are unknown. We must interpret the results with caution because activity analysis was limited to 15 days